DOCUMENT RESUME

ED 315 242 RC 017 298

AUTHOR Gray, James B., Jr.; And Others
TITLE Teacher Use of Word Processing in Rural Special Education.
PUB DATE Mar 89
NOTE 12p.; In: Education and the Changing Rural Community: Anticipating the 21st Century. Proceedings of the 1989 ACES/NRSSC Symposium. See RC 017 257.
PUB TYPE Speeches/Conference Papers (150) -- Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Computer Uses in Education; Cooperative Programs; Elementary Secondary Education; Feasibility Studies; Program Evaluation; Rural Education; *Special Education; *Teacher Attitudes; *Word Processing; *Writing Instruction; Writing Research
IDENTIFIERS Maryland

ABSTRACT

Seven rural counties on Maryland's Eastern Shore cooperated in a 3-year project to determine the feasibility of using microcomputers to instruct special education students in writing skills. All 42 participating teachers received inservice training in teaching writing to special education students; the 26 teachers in the experimental group were also trained in computer use and word processing. Students came from grades 4-12, with the majority from grades 4-9. About half of the classes contained 10 or fewer students and half contained 11-20. Private businesses donated 50 reconditioned outdated Apple computers. In the first phase of project evaluation, experimental-group teachers completed attitude surveys about the practical aspects of using microcomputers and word processing programs. Results showed generally positive teacher perceptions of the project: 77-88% were satisfied with the software program, software training, and technical assistance, but only 50% were satisfied with the equipment. Teachers indicated that word processing had an important positive effect on the writing skills of their mildly handicapped students. Future evaluations will focus on objective measures of change in student writing skills and followup observations of teachers' classroom practices. This paper contains three data tables. (SV)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED315242

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

James B. Gray, Jr.

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

James B. Gray, Jr, Director
Teacher Education
University of Maryland
Eastern Shore
Princess Anne, MD 21853
Glen Hammerbacher, Supervisor
Special Education
Worcester County Schools
Newark, MD 21841
Kathy Simon, Coordinator
Learning Disabilities
Worcester County Schools
Newark, MD 21841

Background

The Maryland State Department of Education (MSDE) cooperatively with seven counties located predominately on the Eastern Shore of Maryland created a research based project to determine the feasibility and outcome of employing microcomputers to instruct special education students in writing skills.

The project was supported by the Christina Foundation. Through the work of the foundation 50 Apple II computers were donated to each of the LEAs for use in the project. The computers were donated by private business who were replacing old machines with new equipment. All computers were reconditioned before they were presented to the LEAs.

The goals of the project were:

1. To determine if writing instruction using word processing results in increased writing skills when compared to writing instruction in which word processing is not employed.

2. To study the effects of writing instruction using word processing on the performance of special education students on the Maryland Functional Writing Test.

3. To determine if writing instruction using word processing results in increased student positive attitude toward writing and school in general.

4. To evaluate teacher attitude toward using word processing to teach writing to special education students.

EC 017298

BEST COPY AVAILABLE

This paper reviews the first phase analyses of the three year project, teacher attitude toward using word processing. Other data will be analyzed and reported as they become available.

Design

The 42 teachers participating in the study were randomly assigned either to a control or an experimental group. The control group consisted of 16 teachers, the experimental group 26. All teachers received inservice training in teaching writing to special education students. Teachers in the experimental group received reconditioned Apple II computers, software and training in word processing. The child:computer ration was 1:1 in most classes but ranged upward to 5:1.

Demographic data were collected as the project began. Pre and post measures were collected on an attitude survey. Teacher attitudes were examined using a semantic differential which measured four concepts: (a) "The writing ability of my students", (b) " Teaching writing to special education students", (c) "Use of microcomputers for classroom instruction", and (d) "Use of computers for instruction of writing." The semantic differential allowed comparison across three dimensions, Evaluation, Potency, and Activity.

After the intervention period was completed, a survey was administered to the teachers who had used word processing to teach writing. The questionnaire was designed to collect teacher attitude about the practical dynamics involved in using microcomputers and word processing programs (Clark & Hayden, 1985).

Preliminary Results

Demographic data are summarized in Table 1, teacher perceptions in Table 2 and teacher attitudes in Table 3. The data presented in this paper primarily serve to describe the teachers involved in the study. Analyses were completed with the Statistical Package for the Social Sciences (SPSS) Crosstabulation program. The means provided for the teacher attitude scales were completed with the SPSSX T test program.

A review of the teachers' education, experiences, and training demonstrate that the control and experimental group were quite similar. Half of each group had advanced degrees.

The mean years of teaching experience generally (Control Mean=8.13; Experimental Mean=8.69) and of teaching writing specifically (Control Mean=8.56; Experimental Mean=7.54) are comparable. More than half of each group had previous in-service training on writing instruction (Control=10; Experimental=17). Both groups considered training in writing techniques either useful or very useful (Control=87.5%; Experimental=88.5%). Sixty-five percent of both groups had previous training on writing instruction.

The organization, class size, and emphases on teaching writing were also comparable. Teachers were responsible for teaching students from grades 4-12; the majority of the students came from grades 4-9. Students were assigned to resource rooms based upon need for special services described by levels I-IV. Level I students were in classrooms where teachers received consultative help from special educators; Level IV students were placed in special classes more than 3 hours per day. The majority of teachers served all levels. Most teachers served groups which did not exceed 10 students. Almost half of the experimental teachers served children in larger groups of 11-20 students, however. Assistance from aides was infrequent.

Forty of the 42 teachers participating in the study wanted access to computers in their classroom. Twenty-nine had used computers for instructional purposes previously. Thirteen had access to computers in their homes.

Insert Table 1 about here

Teachers from the experimental group reported consistently positive perceptions of the project. Training in the use of software was considered adequate by 77% of the teachers; 88% were satisfied with the technical assistance. Eighty-five percent were satisfied with the software program but only 50% were satisfied with the equipment, although equipment adjustments were rather infrequent.

Insert Table 2 about here

Pre and post test differences and differences between the groups on the semantic differential in most cases were marginal. On statement 1, "The writing ability of my students", post test scores were consistently higher across all three dimensions in the experimental group. Comparisons between the groups on statement 1 show consistent higher scores in the experimental group, with marked differences on the post test. On statements 2, "Teaching Writing to special education students", and 3, "Use of microcomputers for classroom instruction," in both groups there were pre test scores which were higher than post test scores. In the control group, pre test scores were higher for statement 2 on the evaluation and activity dimension. For statement 3, the pre test scores were higher across all three dimensions. In the experimental group, pre test scores were higher for statements 2 and 3 on the activity dimension. The pre test score on statement 1, potency dimension, was higher in the control group.

Insert Table 3 about here

Discussion

The results of these data indicate that teachers in rural schools who teach special education students in resource rooms are interested and respond positively to teaching writing through word processing. Teachers can, with minimal in-service training, successfully employ word processing procedures and teach handicapped children to use word processing in their own writing. Teachers, after initial training, require minimal assistance and quickly establish rapport with word processing software. Furthermore, the responses indicate that outdated reconditioned computers with minimal 64 (KB) capacity can be used successfully within special education classrooms.

Although pre and post differences on the semantic differential were minimal in most cases, the marked differences in the experimental group indicate that teachers believe that word processing has an important positive effect on the writing skills of mildly handicapped students. It will be interesting if future analyses of the students' writing support this belief. Follow-up observations will also show the long term effects on teachers. In short, will they make word processing a standard procedure in teaching writing instruction.

Rural school systems should consider carefully the resources employed in this study. The initial outcome indicates that cooperative arrangements with foundations and/or business and industry may be fruitful. Outdated reconditioned computer equipment can be successfully used by teachers in instructing basic skills that have in the past been treated as paper, pencil, worksheet, and workbook drudgery.

Table 1

Demographic Summary Data

Topic	Group	
	Control	Experimental
Grades taught	4th-12th	4th-12th
Levels served	I-IV	I-IV
Years of special education experience	Mean=8.13	Mean=8.69
Years of experience teaching writing	Mean=8.56	Mean=7.54
Degrees earned		
BA/BS	9	13
MA/MS	5	13
PHD/EDD	2	0
Desire to use computer in instruction		
Yes	14	26
No	2	0
Experience using computer in the last year		
Yes	11	17
No	5	9
Computer at home		
Yes	5	8
No	11	17
Computer use prior to 87-88		
Yes	8	14
No	8	11
Computer in-service prior to June 1987		
Yes	10	17
No	6	9

Table 1 continued

Demographic Summary Data

Topic	Group	
	Control	Experimental
Proportion of time spent teaching writing		
0-20%	4	1
21-40%	3	5
41-60%	4	12
61-80%	2	7
81-100%	2	1
Average language arts class size		
1-5	4	4
6-10	9	11
11-15	2	5
16-20	1	6
Frequency of assistance from aide		
Never	11	18
Sometimes	4	4
Always	1	4
Usefulness of training received for this project		
very	2	12
useful	12	11
not	2	2

Note. The data are from "Maryland Writing Study Computer Assisted Word Processing Project" by John Haigh, 1988.

Table 2

Teacher Perceptions Summary Data

Equipment

Topic	Frequency	Responses
Equipment adjustments in last three months	1/day	8
	1/week	5
	1/month	9
	none	4
Computer related assistance in last three months from someone inside your building	1/day	1
	1/week	3
	1/month	10
	none	12
Computer related assistance in last three months from someone outside your building	1/day	1
	1/week	0
	1/month	10
	none	14

Training, Equipment, and Software

Topic	Options	Response
Adequate training on the Milliken Software	Yes	20
	No	6
Satisfaction with Milliken Software	Yes	22
	No	4
Satisfaction with the equipment	Yes	13
	No	13
Satisfaction with technical assistance	Yes	23
	No	2

Table 2 continued

Teacher Perceptions Summary Data

Comparative Data

Topic	Quantity	Responses
Compared to the way you previously taught writing, how much planning time was required to apply the computers?		
	less	3
	same	14
	more	6
Compared to the way you previously taught writing, how easily did your students acquire the concepts	difficulty	
	less	13
	same	7
	more	3
Compared to the way you previously taught writing, what is the level of enthusiasm expressed by your students regarding writing?	enthusiasm	
	less	0
	same	2
	more	21

Note. The data are from "Maryland Writing Study Computer Assisted Word Processing Project" by John Haigh, 1988.

Table 3

Teacher Attitudes Mean Scores

Group I = Control
Group II= Experimental

Statement	1		2		3		4	
	I	II	I	II	I	II	I	II
Evaluation								
Pre Test	16.00	20.00	30.83	29.58	31.16	30.20	31.65	30.00
Post Test	18.43	31.00	30.83	29.67	30.95	32.10	32.28	32.40
Activity								
Pre Test	6.71	7.00	13.72	14.50	15.95	16.50	16.83	15.80
Post Test	8.71	15.00	14.33	13.58	15.68	15.50	16.89	16.60
Potency								
Pre Test	11.00	10.00	20.11	18.00	19.53	19.90	20.00	20.80
Post Test	10.57	23.00	19.17	20.09	19.32	20.40	32.40	21.30

Note. The data are from "Maryland Writing Study Computer Assisted Word Processing Project" by John Haigh, 1988.

References

Clark, D. & Hayden, D. (1985). Easten Shore work processing project: Procedure manual. Baltimore, MD: Maryland State Department of Education.

Haigh, J. (1988). [Maryland writing study computer assisted word processing project]. Unpublished raw data.